



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/788,191	02/17/2001	Paul E. Madden	1760.2.27A	5340

20551 7590 01/11/2005

THORPE NORTH & WESTERN, LLP.  
8180 SOUTH 700 EAST, SUITE 200  
P.O. BOX 1219  
SANDY, UT 84070

EXAMINER

CONNOLLY, MARK A

ART UNIT PAPER NUMBER

2115

DATE MAILED: 01/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/788,191

Applicant(s)

MADDEN ET AL.

Examiner

Mark Connolly

Art Unit

2115

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 7-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 7-35 is/are rejected.
- 7) ☒ Claim(s) 4 and 5 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 February 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08).  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. Claims 1-5 and 7-35 have been presented for examination.
2. Applicant's arguments with respect to claims 1-5 and 7-35 have been considered but are moot in view of the new ground(s) of rejection.

### ***Drawings***

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the following must be shown or the feature(s) canceled from the claim(s).
  - a. detecting the presence of a memory manager and allocating memory for a floppy image allocated by a memory manager before code other than the pre-boot code allocates memory using the memory manager [claim 8].
  - b. reading pre-boot code from the file into a contiguous region of random access memory [claim 9].
  - c. reading pre-boot code from the file directly for execution, sector by sector, using the redirected I/O to read the file as the alternate source [claim 11].
  - d. redirecting floppy I/O to read pre-boot code from at least two non-contiguous regions in the random access memory [claims 12 and 19].
  - e. using the default boot.ini entry to identify non-standard pre-boot code to load [claims 16 and 21].
  - f. identifying sectors of the file that contains the pre-boot code [claim 24].
  - g. allocating a new region of extended memory using an extended memory manager [claim 25].

No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

#### ***Claim Objections***

4. Claim 11 is objected to because of the following informalities: It is first unclear how the file is read directly for execution during the retrieving step. It is explicitly stated in claim 1 that the retrieving step loads the image from the file into RAM. Execution does not occur until after an I/O redirection to redirect floppy I/O to read from RAM and execute pre-boot code from RAM. Since execution does not occur until after the I/O redirection, it is unclear how the system reads the pre-boot code from the file directly for execution. Secondly, claim 1 specifies the

Art Unit: 2115

RAM as being the alternate source and is therefore unclear how the file is also being interpreted as the same alternate source. For examination purposes claim 11 has been interpreted as follows:

The method of claim 1, wherein the retrieving step comprises reading pre-boot code from the file sector by sector, and wherein the reading step uses redirected I/O to read the file from the alternate source.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 16 recites the limitation "the default boot.ini entry." There is insufficient antecedent basis for this limitation in the claim. For examination purposes, the above has been interpreted as "a default boot.ini entry."

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 7, 17 and 27-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman "The Linux Bootdisk HOWTO" in view of Stückelberg et al<sup>1</sup> [Stu] "Linux Remote-Boot mini-HOWTO:"

9. Referring to claim 1, Chapman explicitly teaches:

- h. retrieving an image from a file on the computer into RAM, the image containing the pre-boot code [page 3 section 2.1 and pages 5-6 section 2.4].
- i. emulating a peripheral storage device of the computer and returning data from an alternate source instead of from the peripheral storage device [page 6].
- j. reading at least a first sector of pre-boot code from the emulated peripheral storage device, and executing it, thereby passing control of the computer to the pre-boot code first sector [page 3 steps 5 and 6].

Although it can be argued that returning data from an alternate emulated source (i.e. the Ramdisk) rather than an original source (i.e. the floppy drive) can be interpreted as redirecting the I/O from the floppy drive to the Ramdisk, Chapman does not explicitly come out and explicitly say that the I/O is redirected. Stu explicitly teaches that when loading a floppy image into a Ramdisk, the I/O is redirected to use the floppy image in the Ramdisk rather than from the floppy drive [page 42]. Because Stu teaches that loading a floppy image onto Ramdisk requires redirection of the I/O and because Chapman also loads a floppy image onto Ramdisk, it is obvious that the I/O in Chapman would be redirected as well in order to retrieve data from the Ramdisk rather than from the floppy drive.

10. Referring to claim 7, Chapman and Stu explicitly teach loading a floppy image into extended memory.

11. Referring to claim 17, this is rejected on the same basis as set forth hereinabove.

Chapman and Stu teach the method and therefore teach the system performing the method. In

---

<sup>1</sup> As cited in the previous Office Action.

Art Unit: 2115

addition, Chapman teaches that the disk can also be applied to hard disks rather than floppy disks [page 3 section 2.1].

12. Referring to claim 27, because the Chapman-Stu system loads pre-boot code onto the Ramdisk and executes the pre-boot code from the Ramdisk, the system is booted using only the RAM and therefore does not require using a boot floppy disk or a DOS hard disk partition.

13. Referring to claim 28, this is rejected on the same basis as set forth hereinabove. Chapman and Stu teach the method and therefore teach the system performing the method.

14. Referring to claim 29, it is obvious that the Chapman-Stu system first obtains the pre-boot code then passes control to the operating system in order to boot the computer. During a system boot, pre-boot code such as BOOT.INI is used to select which operating system to load. Once the correct operating system is loaded, that operating system can perform what is commonly referred to in the art as bootstrapping to complete the booting of the system.

15. Referring to claims 30-32, these are rejected on the same basis as set forth hereinabove. Chapman and Stu teach the method and therefore teach the computer program performing the method.

16. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman and Stu as applied to claims 1, 7, 17 and 27-32 above, and further in view of opiate "how to make a Dos boot disk using win 95 ???"

17. Referring to claims 2 and 3, although Chapman and Stu teach loading a floppy image into a Ramdisk for booting a system, it is not explicitly taught that the image would cause the system to load a different operating system, that different operating system being a DOS operating

Art Unit: 2115

system. opiate teaches that a boot disk can be used to load DOS rather than Win 95. Because opiate teaches that a boot disk can cause a system to load a different operating system, it is obvious that the floppy image loaded into the Ramdisk in the Chapman-Stu system can cause a different operating system to load because the image loaded into the Ramdisk is from a boot disk.

18. Claims 8 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman and Stu as applied to claims 1, 7, 17 and 27-32 above, and further in view of Pete "Ram Disk?"

19. Referring to claim 8, although Chapman and Stu teach loading a floppy image into memory, it is not explicitly taught that image is loaded into memory allocated by the memory manager before code other than the pre-boot code allocates memory using the memory manager. Pete explicitly teaches that a Ramdisk requires a call to a memory manager for allocating space in memory for the Ramdisk to use [page 2]. It is obvious that the Chapman-Stu system would also call a memory manager so that memory could be allocated for the Ramdisk in the Chapman-Stu system. Because the floppy image is loaded onto the Ramdisk and because the Ramdisk is created within the memory allocated by the memory manager, it is obvious that the floppy image is loaded into the memory allocated by the memory manager. In addition, because the floppy image comprises pre-boot code, it is obvious that this allocation is performed before code other than pre-boot code allocates memory using the memory manager like for example the operating system because the pre-boot code is loaded before the operating system.



Art Unit: 2115

20. Referring to claim 25, this is rejected on the same basis as set forth hereinabove.

Chapman, Stu and Pete teach the method and therefore teach the system performing the method.

In addition, Pete teaches that the call can be made to an extended memory manager to allocate space within extended memory [page 2].

21. Claims 9, 10 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman and Stu as applied to claims 1, 7, 17 and 27-32 above, and further in view of Bigby "Increased memory and caching... Ramdisk the answer?"

22. Referring to claims 9 and 10, although Chapman and Stu teach loading pre-boot code into RAM, it is not explicitly taught that the pre-boot code is loaded into and read from a contiguous region of RAM. Bigby explicitly teaches that "Ramdisk memory is contiguous" [page 1].

Therefore, because the Chapman-Stu system loads and reads pre-boot code to and from RAM on the Ramdisk, it is obvious that they are loaded and read to and from a contiguous region of the RAM since Ramdisks memory is contiguous. The contiguous region of RAM is interpreted also as at least one region of RAM.

23. Referring to claim 18, this is rejected on the same basis as set forth hereinabove.

Chapman, Stu and Bigby teach the method and therefore teach the system performing the method.

24. Claims 11-12, 19 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman, Stu as applied to claims 1, 7, 17 and 27-32 above, and further in view of Porkka "Boot disk optimizier?"

Art Unit: 2115

25. Referring to claims 11 and 12, although Chapman and Stu teach reading pre-boot code from a floppy, it is not explicitly taught that the disk is read sector by sector wherein at least two sectors are not contiguous on disk. Porkka teaches that boot disks can be fragmented. This fragmentation would cause the sectors to be noncontiguous. Because the Chapman-Stu system loads a boot disk into the Ramdisk, it is obvious that the boot disk could be fragmented as taught by Porkka. Because the data is read from and written into memory in blocks (blocks are interpreted as sectors), it is obvious that disk would be read sector by sector.

26. Referring to claim 19, this is rejected on the same basis as set forth hereinabove. Chapman, Stu and Porkka teach the method and therefore teach the system performing the method. It is well known in the art that fragmentation also occurs in RAM.

27. Referring to claim 24, it is obvious that the Chapman, Stu, Porkka system comprise a data structure that identifies sectors of the file that contain pre-boot code because the pre-boot code data can be in noncontiguous locations on the disk as explained above and thus would require a data structure for identifying where on the fragmented disk the different portions of pre-boot code are located so that they can be retrieved.

28. Claims 13, 21 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman, Stu and opiate as applied to claims 1-3, 7, 17 and 27-32 above, and further in view of Mary<sup>2</sup>.

29. Referring to claim 13, although the Chapman-Stu-opiate system teaches booting from a second operating system, it is not explicit that a default item in a boot.ini file is set. Mary

---

<sup>2</sup> As cited in the previous office action.

Art Unit: 2115

teaches setting a default item in a boot.ini file in order to enable dual-boot capabilities in a computer system. Because the Chapman-Stu-opiate system has dual boot capabilities, it would have been obvious to one of ordinary skill in the art that the Chapman-Stu-opiate system would set a default item in a boot.ini file because it would allow the system to function with dual-boot capabilities.

30. Referring to claims 21 and 33, these are rejected on the same basis as set forth hereinabove. Chapman, Stu, opiate and Mary teach the method and therefore teach the system and computer program performing the method.

31. Claim 14-15, 22-23 and 34-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman, Stu and opiate as applied to claims 1-3, 7, 17 and 27-32 above, and further in view of Dalton et al<sup>3</sup> [Dalton].

32. Referring to claim 14, although the Chapman-Stu-opiate system teaches booting from different operating systems, Chapman, Stu nor opiate explicitly teach a boot.ini file. Dalton explicitly teaches that computers comprise a boot.ini file, which is used to boot a computer system and which also contains information on the names and locations of different bootable operating systems [page 124]. It would have been obvious to include the teachings of Dalton in the Chapman-Stu-opiate system wherein that each operating system to load would have a corresponding file associated with loading that particular operating system and it is further obvious that the name which corresponds to the NT boot record to load would be changed to specify which operating system is to be loaded.

---

<sup>3</sup> As cited by the applicant.

Art Unit: 2115

33. Referring to claim 15, although the Chapman-Stu-opiate system teaches booting from different operating systems, Chapman, Stu nor opiate explicitly teach substituting other pre-boot code for standard loader code. Dalton teaches that in a dual boot system, if an operating system which is not the default operating system is loaded then BOOTSECT.DOS is loaded rather than NTDETECT.com [pages 124-125]. BOOTSECT.DOS is interpreted as other pre-boot code.

34. Referring to claims 22-23 and 34-35, these are rejected on the same basis as set forth hereinabove. Stu, Matthews and Dalton teach the method and therefore teach the system and computer program performing the method.

35. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman, Stu as applied to claims 1, 7, 17 and 27-32 above, and further in view of Smallen "booting NT off floppy (bootloader on floppy, NT on scsi id 3)."

36. Referring to claim 16, although Chapman and Stu teach loading non-standard pre-boot code into memory, it is not explicitly taught that the BOOT.INI identifies the non-standard pre-boot code. Smallen explicitly teaches that the BOOT.INI can identify and boot an alternate operating system rather than the default operating system [pages 1-2]. The code to load the alternate operating system is interpreted as non-standard pre-boot code. It would have been obvious to include the teachings of Smallen into the Chapman-Stu system because it provides a means to load an alternate operating system which is not installed on a hard disk.

Art Unit: 2115

37. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman, Stu as applied to claims 1, 7, 17 and 27-32 above, and further in view of Woodhull "DOS-based RAM disk Minix... or such a thing?"

38. Referring to claim 20, although Chapman and Stu teach loading pre-boot code and redirecting floppy I/O, it is not explicitly taught that this is done without requiring a booted file system and a booted operating system. Woodhull teaches installing the file system onto the Ramdisk during boot time. It would have been obvious to install the file system onto the Ramdisk in the Chapman-Stu system because the Ramdisk operates very quickly and would be able to run the file system very quickly as well. It should be apparent that the file system cannot be loaded into the Ramdisk until the Ramdisk is set up. Therefore obvious that the Ramdisk is set up without a loaded or booted file system. The loading and redirecting steps are interpreted as setting up the Ramdisk. In addition, setting up the Ramdisk also occurs before the operating system is booted as explained above and therefore also does not require a booted operating system.

39. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman, Stu as applied to claims 1, 7, 17 and 27-32 above, and further in view of Stevens US Pat No 5724550.

40. Referring to claim 26, although Chapman and Stu teach loading pre-boot code into memory (i.e. Ramdisk), it is not explicitly taught that the pre-boot code is cached. Stevens teaches caching frequently used portions of BIOS code [col. 2 lines 38-41]. Because BIOS code comprises code for initializing and booting a system, it would have been obvious to one of ordinary skill in the art to modify the Chapman-Stu system to load portions of frequently used

Art Unit: 2115

BIOS code into a cache memory because cache memories are even faster than main memory and would therefore further increase the performance of the Chapman-Stu system.

*Allowable Subject Matter*

41. Claims 4 and 5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

*Conclusion*

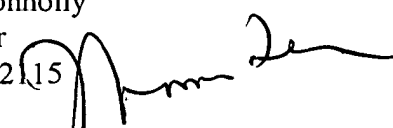
42. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Connolly whose telephone number is (571) 272-3666. The examiner can normally be reached on M-F 8AM-5PM (except every first Friday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas C Lee can be reached on (571) 272-3667. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mc  
January 4, 2005

Mark Connolly  
Examiner  
Art Unit 2115

  
THOMAS LEE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100